DETAILED ACTION

1. The present Office Action is responsive to communications received on 12/13/2010. Claims *29,32-36,38,40-52 and 55-70.* Claim 39 has been cancelled by amendments received on 12/13/2010.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. *Claims 29, 40 and 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.*

3. Claim 29 recites in the last limitation "said hierarchical position relation", which lacks antecedent basis and introduces an indefiniteness in the claim. For examination purposes, the limitation will be considered as "said hierarchical position". Correction is required.

4. Claims 40 and 41 appear to depend from cancelled claim 39 and are indefinite. It is not understood what limitations claims 40 and 41 are further limiting. For examination

purposes, claim s 40 and 41 will be considered as depending from claim 29. Correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. *Claims 29, 32, 33, 40, 41, 43-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamaru, U.S. 20020059320, in view of Karaoguz, U.S. 20040203931, and in further view of Yang-Huffman, U.S. 20030110252 and Tantry et al., U.S. Patent No. 5548756, hereinafter Tantry.*

6. As to claim 29, Tamaru discloses **a method of managing information exchanges in an outdoor worksite** (paragraph [0002], lines1-5) **with an office on said outdoor worksite, said outdoor worksite comprising any one of a civil engineering worksite, a landscaping worksite, a road or rail link construction worksite or a mining worksite** (paragraph [0265], lines 1-3: site office in Fig. 2A)**, by networked items of apparatus which perform tasks in connection with said outdoor worksite** (paragraph [0056], lines 1-4) **and which receive and/or send data** (paragraph [0057], lines 1-3)**, the method using an electronic data network**

comprising management means cooperating with a plurality of communications interfaces (paragraph [0060], lines 1-6)**, a given said networked item of apparatus having a data link with a specified communications interface** (Fig. 4: leader machine in phase 1 and communications links 6)**, said networked items of apparatus** (paragraph [0276], lines 1-11: communications between construction machines via radio communication links) **comprise networked mobile items of apparatus and networked static items of apparatus (**paragraph [0329], lines 1-7: constructions machines and sensors)**, wherein all said networked items of apparatus are organized in a plurality of hierarchical levels according to a determined dependency relationship of the outdoor worksite** (Fig. 4 and paragraph [0265], lines 1-19: leader machines managing followers machines, which include monitor devices and sensors devices, as read in paragraph [0302], lines 1-8, are devices considered to be in a hierarchy)**, and in that said management means which includes a processor and memory** (paragraph [0108], lines 1-2: the server has memory, and inherently has a processor too)**.**

7. However, Tamaru does not teach **each networked mobile item of apparatus and networked static item of apparatus being capable of communication with any other networked mobile and static item of apparatus within communication range of its communications interface.**

8. Karaoguz discloses a plurality of wireless devices capable of communicating with each other (paragraph [0019], lines 9-17). A user of a device entering a geographic area activates a device locator to identify the available devices (paragraph [0024], lines 1-10). The user device determines its own position (paragraph [0042], lines 1-3) and determines the distance range of available devices and the coordinates of each available device it can be in communication with within the distance range (paragraph [0044], lines 1-9).

9. It would have been obvious to a person with ordinary skills in the art at the time of the invention to modify the teachings of Tamaru by implementing the capabilities of mobiles devices as taught by Karaoguz into the networked items of apparatus, the capabilities allowing the networked items of apparatus to communicate with each other in the network, and determine a distance range of communication with the others networked items. Knowing the communication range of other devices in the network would be efficient by having the devices communicate in the right frequency.

10. While the combination of Tamaru and Karaoguz discloses a database in the management server apparatus storing information about the work machines (paragraph [0068], lines 1-6, from Tamaru) at a worksite comprising **networked items of apparatus including the mobile items and static items of apparatus** (paragraph [0302], lines 1-8, from Tamaru: construction machines associated with sensors for determining vehicle conditions and positions) the combination of Tamaru and Karaoguz

does not teach **the method comprising the following acts: storing a correspondence between each said networked item of apparatus and an address structure reflecting the hierarchical position of that networked item of apparatus in said determined dependency relationship of the civil engineering, landscaping, road or rail link construction, or mining worksite in a database;**
operating by converting a first address structure reflecting a hierarchical position of a selected earth moving mobile networked item of apparatus into a corresponding first device address for accessing said selected earth moving mobile networked item of apparatus on said electronic data network;
using that first device address to establish a communications link with said selected earth moving mobile networked item of apparatus, via its communications interface, in response to a first call addressed with an address structure reflecting the hierarchical position of said selected earth moving mobile networked item of apparatus;
operating by converting a second address structure reflecting the hierarchical position of a selected static networked item of apparatus into a corresponding second device address for accessing said selected static networked item of apparatus on said electronic data network; and
using that second device address to establish a communications link with said static networked item of apparatus, via its communications interface, in response to a second call addressed with an address structure reflecting the hierarchical position of said selected static item of apparatus.

11. Yang-Huffman describes a method of collecting information from nodes in a network (paragraph [0013], lines 1-3). Networks nodes or data sources 110-1, 110-n include a SNMP agent and an internal database for storing management information (paragraph [0024], lines 1-13). A network topology application stores a snapshot of the network into a network map comprising a hierarchical structure of the network (paragraph [0027], lines 1-9). The end nodes are indicated by hostnames that can be mapped to IP, and by symbol position, label, existence of parent, layout status ... (paragraph [0027], lines 21-31). Information of the networks nodes is collected by a monitoring application (paragraph [0029], lines 1-22). SNMP is known to present information about a node of a network in a tree like structure, showing grouping of related objects in sets, and the dependency of objects (paragraph [0007], lines 1-18). For instance, to access the process "sysuptime", which is a managed object in the network, a series of integer: 1.3.1.6.1.2.1.1.3 is used, representing iso.org.dod.internet.mgmt.mib2.system.sysuptime. This representation shows the dependencies between the process, the system host, in the different levels of hierarchy within the organization. To access a node (system host) in response to a call using the hierarchical position of the node, means accessing the hostname or IP of that node, which is described with all the dependencies of the node with other nodes in the network; the IP address of the node is then used to establish communication with that node.

12. Although Yang-Huffman's invention is not directed to mobile or static devices in a worksite, it would have been obvious to a person with ordinary skills in the art at the

time of the invention to modify the teachings of Tamaru and Karaoguz by the teachings of Yang-Huffman mapping the network devices constituted by the construction work machines (mobile or static), into a map file using SNMP, showing the dependency relationship between the works machines and storing the information in a database, in order to implement the storing of a correspondence between each said item of apparatus and an address structure reflecting the hierarchical position of that item of apparatus and operating by converting said address structure reflecting the hierarchical position of said selected item of apparatus into a corresponding device address for accessing said selected item of apparatus on said electronic network and using the device address to establish communication with that device, as disclosed in claim 29. Using SNMP to map a hierarchical network of devices, with end nodes described with their name/IP allow a descriptive view of the dependencies in a network and could help pinpoint root cause of nodes failures (paragraph [0028], lines 14-21, from Yang-Huffman). For instance, if device1 is mapped as node1.node2.node3.node4.device1 and device2 is mapped as node1.node2.node3.device2, if device2 is functioning OK, and device1 failing, we can deduct that node1.node2.node3 are functioning properly, that narrows the search of failure to node4 or device1. The method of Yang-Huffman can be used regardless of the functionality of a node of device in the network (earth moving device, static device).

13. However, the combination of Tamaru, Karaoguz and Yang-Huffman does not disclose **assigning a separate class/subclass, in said hierarchical position**

relation, to items of apparatus as a function of whether they are static or mobile on the worksite.

14. Tantry discloses a factory floor management system modeling factor floor entities as objects (col. 2, lines 10-15). The objects are organized in hierarchies according to the objects characteristics; for instance, in an object called 'equipment', are found sub-classes such as 'mobile', and 'stationary', each subclass further subclassed (col. 4, lines 45-66 and Fig. 2-).

15. It would have been obvious to a person with ordinary skills in the art at the time of the invention to combine the teachings of Tamaru, Karaoguz and Yang-Huffman with the teachings of Tantry by organizing to the items of apparatus as taught by Tamaru, Karaoguz and Yang-Huffman, into class/subclass reflecting the characteristics of the items represented by objects, as taught by Tantry, in order to implement claim 29. Using objects for representing worksite devices organized in hierarchy where each object is identified by characteristic and behavior would allow an efficient management of the devices, by "preserving a high level of correspondence between the software model of the network, and the reality" (col. 4, lines 35-44, from Tantry).

16. As to claim 32, the combination of Tamaru, Karaoguz ,Yang-Huffman and Tantry discloses a method according to claim 29, wherein said address structure is an IP (Internet Protocol) address (paragraph [0027], lines 20-24, from Yang-Huffman).

17. As to claim 33, the combination of Tamaru, Karaoguz ,Yang-Huffman and Tantry discloses a method according to claim 29, wherein said address structure reflecting the

hierarchical position of said selected item of apparatus (paragraph [0027], lines 1-15, from Yang-Huffman) is expressed as a directory-path (paragraph [0007], lines 1-18, from Yang-Huffman: an object in SNMP consists of a sequence of integers, each representing a level in a tree structure, which is interpreted as a directory path).

18. As to claim 40, the combination of Tamaru, Karaoguz ,Yang-Huffman and Tantry discloses a method according to claim [[39]]29, wherein at least some items of mobile apparatus perform the act of relaying messages over said electronic network (paragraph [0061], lines 1-7, from Tamaru: work machines transmit information to leader machines by communications means 6, as seen in Fig. 4).

19. As to claim 41, the combination of Tamaru, Karaoguz ,Yang-Huffman and Tantry discloses the method according to claim [[39]]29 further comprising an act of determining a current position of items of mobile apparatus and the act of managing the distribution of messages within said electronic network according to the items' current position (paragraph [0298], lines 1-6, from Tamaru: proper location of a machine is determined in case accident, theft ...).

20. As to claim 43, the combination of Tamaru, Karaoguz ,Yang-Huffman and Tantry discloses a method according to claim 29, further comprising an act of securing communications by providing technical means for restricting access to the network to only authorized communications interfaces (paragraph [0334], lines 1-21, from Tamaru: access to network restricted to authorized constructions companies by means of password).

21. As to claim 44, the combination of Tamaru, Karaoguz ,Yang-Huffman and Tantry discloses a method according to claim 29, further comprising an act of limiting data transmissions to between only those items of apparatus which are mutually compatible or expected to communicate with each other over said electronic network (paragraphs [0069], lines 1-7, [0070], lines 1-3 and Fig. 4, from Tamaru: communications betweens the work machines, the leader machine and the server is performed using communications interfaces 6 and 5 only).

22. As to claim 45, the combination of Tamaru, Karaoguz ,Yang-Huffman and Tantry discloses a method according to claim 44, further comprising the act of providing a centralized monitoring and/or management of messages exchanged over said electronic network (paragraph [0060], lines 1-6, from Tamaru: the server apparatus collects information on work machines for management purposes and paragraph [0070], lines 1-3: messages communicated to leader machines are transmitted to server apparatus).

23. As to claim 46, the combination of Tamaru, Karaoguz ,Yang-Huffman and Tantry discloses a method according to claims 29, further comprising an act of providing a centralized management of static or dynamic identification allocation to the communications interfaces operating in the network (paragraph [0330], lines 1-13, from Tamaru: the work machines' vehicle ID is transmitted to server via communication link 5).

24. As to claim 47, the combination of Tamaru, Karaoguz ,Yang-Huffman and Tantry discloses a method according to claim 29, further comprising an act of executing automatically a work plan programming said tasks of said items of apparatus automatically to conduct operations in said worksite (paragraph [0042], lines 1-5, from Tamaru), commands of said work plan designating selectively to said items of apparatus (paragraph [0325], lines 1-10, from Tamaru: phases 1-3 of work plan involves different machines and commands or functions as seen in Fig. 4) using said address structure reflecting the hierarchical position (Fig. 4 and paragraph [0265], lines 1-19, from Tamaru: leader machines managing followers machines, which include monitor devices and sensors devices, as read in paragraph [0302], lines 1-8, are devices considered to be in a hierarchy) of said selected item(s) of apparatus (paragraph [0027], lines 1-15, from Yang-Huffman).

25. As to claim 48, the combination of Tamaru, Karaoguz ,Yang-Huffman and Tantry discloses a method according to claim 29, wherein said items of apparatus communicate to each other selectively, a call being made from one item of apparatus to another (paragraph [0326], lines 1-12, from Tamaru: the followers machine communicate with leader machine) using said address structure reflecting the hierarchical position of said selected item of apparatus (paragraph [0027], lines 1-25, from Yang-Huffman).

26. As to claim 49, the combination of Tamaru, Karaoguz ,Yang-Huffman and Tantry discloses a method according to claim 29 for managing an automated worksite further

comprising an act of sending commands to a contour changing apparatus and to an on-board apparatus through a defined protocol (paragraph [0326], lines 1-12, from Tamaru: during phase 1 of the work plan, crushers 34 or contour changing apparatus are operated and terminal device 31a on board the server apparatus transmits commands), the commands being elaborated from a predetermined model (paragraph [0334], lines 1-21, from Tamaru: parameters such as pavement thickness as predetermined and scheduled to be ordered).

27. As to claim 50, the combination of Tamaru, Karaoguz ,Yang-Huffman and Tantry discloses a method according to claim 29 for managing an automated worksite in which physical and logical addressing of the communication interfaces is separated with a unique ID other than the IP address (paragraph [0330], lines 1-13, from Tamaru: vehicle ID is used for the transmission of data).

28. As to claim 51, the combination of Tamaru, Karaoguz ,Yang-Huffman and Tantry discloses a method according to claim 50, wherein the physical and logical addressing includes multiple different IP and/or unique ID addressing (paragraph [0330], lines 1-13, from Tamaru: vehicle ID could be used in the physical and logical addressing by adding the vehicle ID to the directory path, for instance to distinguish crusher 34 and 35 of Fig. 4, from Tamaru).

29. *Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamaru, Karaoguz,Yang-Huffman and Tantry, in view of Soderberg et al., U.S. patent No. 6,519,626, hereinafter Soderberg.*

30. As to claim 34, the combination of Tamaru, Karaoguz, Yang-Huffman and Tantry discloses a method according to claim 29; however, the combination of Tamaru, Karaoguz, Yang-Huffman and Tantry does not teach wherein said worksite is identified by a generic portion of a said address structure that comprises said address structure reflecting the hierarchical position of a selected item of apparatus.

31. Soderberg teaches converting a file system path to a URL (col. 2, lines 47-48) using a converting module and including the subdirectory structure of the file (col. 3, lines 13-30). Files with the following directory path: c:\directory \sub\file1, c:\directory \sub\file2 ... would be converted into http://www.domain.com:123/subdirectory/sub/file1 or http://www.domain.com:123/subdirectory/sub/file2 ...(col. 3, lines 24-54), in which http://www.domain.com:123/subdirectory/sub/, can be considered as a fixed or generic part of different filenames, and correspond to a directory path to a common subdirectory.

32. It would have been obvious to a person with ordinary skills in the art at the time of the invention to modify the teachings of Tamaru, Karaoguz, Yang-Huffman and Tantry with the teachings of Soderberg by converting directory pathnames or work machines into URLs. In the examples given above, http://www.domain.com:123/subdirectory/sub/, could correspond to a directory path: c:\directory \sub\, where "directory" is the construction project name (paragraph [0280], lines 1-8, from Tamaru), "sub" corresponds to the leader machines in phase 1 (see Fig. 4) and file1, file2 ... correspond to the followers machines 32-35 (Fig. 4, from Tamaru).

As the same project involves different phases with different machines, the project name in the directory path could be considered as generic. Including a generic portion identifying a worksite in the directory-path would easily identify work machines used in that working site.

33. As to claim 35, the combination of Tamaru, Karaoguz, Yang-Huffman and Tantry discloses a method according to claim 29; however, the combination of Tamaru, Karaoguz, Yang-Huffman and Tantry does not teach, wherein said address structure reflecting a hierarchical position of a said item of apparatus is a Uniform Resource Locator (URL), said URL having a directory-path portion corresponding to said address structure reflecting the hierarchical position of said selected item of apparatus.

34. Soderberg teaches converting a file system path to a URL (col. 2, lines 47-48) using a converting module and including the subdirectory structure of the file (col. 3, lines 13-30). Files with the following directory path: c:\directory \sub\file1, c:\directory \sub\file2 ... would be converted into http://www.domain.com:123/subdirectory/sub/file1 or http://www.domain.com:123/subdirectory/sub/file2 ...(col. 3, lines 24-54), in which http://www.domain.com:123/subdirectory/sub/, reflecting the hierarchical position of the files in the directory structure. Information on the files could be then accessed using a browser pointing to the URL.

35. It would have been obvious to a person with ordinary skills in the art at the time of the invention to modify the teachings of Tamaru, Karaoguz, Yang-Huffman and Tantry with the teachings of Soderberg by converting directory pathnames or work

machines into URLs. In the examples given above, http://www.domain.com:123/subdirectory/sub/, could correspond to a directory path: c:\directory \sub\, where "directory" is the construction project name (paragraph [0280], lines 1-8, from Tamaru), "sub" corresponds to the leader machines in phase 1 (see Fig. 4) and file1, file2 ... correspond to the followers machines 32-35 (Fig. 4, from Tamaru). The work machines mapped to URLs would allow an easy retrieval of information about the devices, using a web browser.

36. As to claim 36, the combination of Tamaru, Karaoguz, Yang-Huffman, Tantry and Soderberg discloses the method according to claim 35, wherein said uniform resource locator includes a hostname portion that is specific to said worksite (col.3, lines 44, from Soderberg: www.domain.com is the domain name of the server including the files, it could correspond to the server apparatus 11 managing the working machines of Tamaru).

37. *Claims 52, 55 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamaru, in view of Karaoguz, and in further view of Yang-Huffman.*

38. As to claim 52, Tamaru discloses **a system for managing information exchanges in an outdoor worksite with an office on said outdoor worksite** (paragraph [0002], lines1-5)**, said outdoor worksite comprising any one of a civil engineering worksite, a landscaping worksite, a road or rail link construction**

worksite or a mining worksite (paragraph [0265], lines 1-3: site office in Fig. 2A)**, the networked items of apparatus including mobile and static items of apparatus** (paragraph [0329], lines 1-7: constructions machines and sensors) **comprising: an electronic communications network connecting items of apparatus** (Fig. 4: construction machines connected through network 6, in communications with management apparatus through link 5) **which perform tasks in connection with said outdoor worksite** (paragraph [0056], lines 1-4) **and which receive and/or send data** (paragraph [0057], lines 1-3)**, the items of apparatus comprise the mobile items of apparatus and static items of apparatus,** (paragraph [0329], lines 1-7: constructions machines and sensors) **the electronic communications network comprising: management means cooperating with a plurality of communications interfaces** (paragraph [0060], lines 1-6)**, a given said item of apparatus having a data link with a specified said communications interface** (Fig. 4: leader machine in phase 1 and communications links 6)**, wherein all said networked items of apparatus are organized in a plurality of hierarchical levels according to a determined dependency relationship of the outdoor worksite** (Fig. 4 and paragraph [0265], lines 1-19: leader machines managing followers machines, which include monitor devices and sensors devices, as read in paragraph [0302], lines 1-8, are devices considered to be in a hierarchy).

39. However, Tamaru does not teach **each networked item of apparatus being capable of communication with any other networked item of apparatus within communication range of its communications interface.**

40. Karaoguz discloses a plurality of wireless devices capable of communicating with each other (paragraph [0019], lines 9-17). A user of a device entering a geographic area activates a device locator to identify the available devices (paragraph [0024], lines 1-10). The user device determines its own position (paragraph [0042], lines 1-3) and determines the distance range of available devices and the coordinates of each available device it can be in communication with within the distance range (paragraph [0044], lines 1-9).

41. It would have been obvious to a person with ordinary skills in the art at the time of the invention to modify the teachings of Tamaru by implementing the capabilities of mobiles devices as taught by Karaoguz into the networked items of apparatus, the capabilities allowing the networked items of apparatus to communicate with each other in the network, and determine a distance range of communication with the others networked items. Knowing the communication range of other devices in the network would be efficient by having the devices communicate in the right frequency.

42. While the combination of Tamaru and Karaoguz discloses a database in the management server apparatus storing information about the work machines (paragraph

[0068], lines 1-6, from Tamaru) at a worksite comprising **networked items of apparatus including the mobile items and static items of apparatus** (paragraph [0302], lines 1-8, from Tamaru: construction machines associated with sensors for determining vehicle conditions and positions) the combination of Tamaru and Karaoguz does not teach: **means for storing a correspondence between both a selected earth moving mobile item of apparatus and a selected static item of apparatus and an address structure reflecting the hierarchical position of those items of apparatus in said determined dependency relationship of the outdoor worksite in a database;**
means for operating by converting said address structures reflecting the hierarchical positions of the selected items of apparatus into corresponding device addresses for accessing said selected items of apparatus on said electronic network; and
means operating on the basis of said device addresses to establish communications links with the selected items of apparatus, via their communications interfaces, in response to a call addressed with an address structure reflecting the hierarchical position of said selected items of apparatus.

43. Yang-Huffman describes a method of collecting information from nodes in a network (paragraph [0013], lines 1-3). Networks nodes or data sources 110-1, 110-n include a SNMP agent and an internal database for storing management information (paragraph [0024], lines 1-13). A network topology application stores a snapshot of the

network into a network map comprising a hierarchical structure of the network (paragraph [0027], lines 1-9). The end nodes are indicated by hostnames that can be mapped to IP, and by symbol position, label, existence of parent, layout status ... (paragraph [0027], lines 21-31). Information of the networks nodes is collected by a monitoring application (paragraph [0029], lines 1-22). SNMP is known to present information about a node of a network in a tree like structure, showing grouping of related objects in sets, and the dependency of objects (paragraph [0007], lines 1-18). For instance, to access the process "sysuptime", which is a managed object in the network, a series of integer: 1.3.1.6.1.2.1.1.3 is used, representing iso.org.dod.internet.mgmt.mib2.system.sysuptime. This representation shows the dependencies between the process, the system host, in the different levels of hierarchy within the organization. To access a node (system host) in response to a call using the hierarchical position of the node, means accessing the hostname or IP of that node, which is described with all the dependencies of the node with other nodes in the network; the IP address of the node is then used to establish communication with that node.

44. Although Yang-Huffman's invention is not directed to mobile or static devices in a worksite, it would have been obvious to a person with ordinary skills in the art at the time of the invention to modify the teachings of Tamaru and Karaoguz by the teachings of Yang-Huffman mapping the network devices constituted by the construction work machines (mobile or static), into a map file using SNMP, showing the dependency relationship between the works machines and storing the information in a database, in

order to implement the storing of a correspondence between each said item of apparatus and an address structure reflecting the hierarchical position of that item of apparatus and operating by converting said address structure reflecting the hierarchical position of said selected item of apparatus into a corresponding device address for accessing said selected item of apparatus on said electronic network and using the device address to establish communication with that device, as disclosed in claim 52. Using SNMP to map a hierarchical network of devices, with end nodes described with their name/IP allow a descriptive view of the dependencies in a network and could help pinpoint root cause of nodes failures (paragraph [0028], lines 14-21, from Yang-Huffman). For instance, if device1 is mapped as node1.node2.node3.node4.device1 and device2 is mapped as node1.node2.node3.device2, if device2 is functioning OK, and device1 failing, we can deduct that node1.node2.node3 are functioning properly, that narrows the search of failure to node4 or device1. The method of Yang-Huffman can be used regardless of the functionality of a node of device in the network (earth moving device, static device).

45. As to claim 55, it has the same substance as claim 32, and therefore is rejected on the same grounds as claim 32.

46. As to claim 56, it has the same substance as claim 33, and therefore is rejected on the same grounds as claim 33.

47. *Claims 57-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamaru, Karaoguz,Yang-Huffman, in view of Soderberg.*

48. As to claim 57, it has the same substance as claim 34, and therefore is rejected on the same grounds as claim 34, by combining the teachings of Tamaru, Karaoguz,Yang-Huffman, and Soderberg.

49. As to claim 58, it has the same substance as claim 35, and therefore is rejected on the same grounds as claim 35, by combining the teachings of Tamaru, Karaoguz,Yang-Huffman, and Soderberg.

50. As to claim 59, it has the same substance as claim 36, and therefore is rejected on the same grounds as claim 36, by combining the teachings of Tamaru, Karaoguz,Yang-Huffman, and Soderberg.

51. *Claims 38,42 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamaru, Karaoguz, Yang-Huffman and Tantry, in view of Uhler et al., U.S. 20010039587, hereinafter, Uhler.*

52. As to claim 38, the combination of Tamaru, Karaoguz, Yang-Huffman and Tantry discloses the method according to claim 29; however, the combination of Tamaru, Karaoguz, Yang-Huffman and Tantry does not further teach an act of converting an address structure designating an item of apparatus to be accessed in accordance with a second hierarchy , the second hierarchy being different from the hierarchy used by the management means to organize the hierarchical levels according to said determined

dependency relationship, into the address in said electronic network of said designated item of apparatus.

53. Uhler discloses classes of objects defining particular instance of objects that can have subclasses (paragraph [0056], lines 1-7, and paragraph [0058], lines 1-10: Uhler converts or represents the objects representing the network devices into classes and subclasses including variables and methods).

54. It would have been obvious to a person of ordinary skills in the art at the time of the invention to combine the teachings of Tamaru, Karaoguz, Yang-Huffman and Tantry with the teachings of Uhler creating hierarchy of classes for the objects in a network, in order to implement a method as disclosed in claim 38. For instance, a class defining attributes of devices such as mobile or static could be defined with a method using variation of coordinate of the devices with time, and further a subclass modifying the attribute of the class could be added as a responsive functionality, as disclosed in claim 42 . Such combination would have allowed defining instances of objects including variables and method specific to that class.

55. Claim 42 includes the same substance as claim 38, and therefore is rejected using the same rationale.

56. As to claim 60, the combination of Tamaru, Karaoguz, Yang-Huffman and Tantry discloses a method according to claim 29; however, the combination of Tamaru,

Karaoguz, Yang-Huffman and Tantry does not teach assigning a separate class or subclass in the hierarchical position relation to the items of apparatus as a function of whether the items of apparatus are static or mobile on the worksite.

57. Uhler discloses classes of objects defining particular instance of objects that can have subclasses (paragraph [0056], lines 1-7, and paragraph [0058], lines 1-10: Uhler converts or represents the objects representing the network devices into classes and subclasses including variables and methods).

58. It would have been obvious to a person of ordinary skills in the art at the time of the invention to combine the teachings of Tamaru, Karaoguz, Yang-Huffman and Tantry with the teachings of Uhler creating hierarchy of classes for the objects in a network, in order to implement a method as disclosed in claim 60. For instance, a class defining attributes of devices such as mobile or static could be defined with a method using variation of coordinate of the devices with time, and further a subclass modifying the attribute of the class could be added as a responsive functionality, as disclosed in claim 42 . Such combination would have allowed defining instances of objects including variables and method specific to that class.

59. *Claims 61-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamaru and Yang-Huffman, in view of Uhler, and further view of Birger et al., U.S. 20090006840, hereinafter Birger.*

60. As to claim 61, Tamaru discloses **a method of managing information exchanges in an outdoor worksite with an office on said outdoor worksite** (paragraph [0002], lines1-5)**, said outdoor worksite comprising any one of a civil engineering worksite, a landscaping worksite, a road or rail link construction worksite or a mining worksite** (paragraph [0265], lines 1-3: site office in Fig. 2A)**, by networked items of apparatus which perform tasks in connection with said outdoor worksite** (paragraph [0056], lines 1-4) **and which receive and/or send data** (paragraph [0057], lines 1-3)**, the method using an electronic data network comprising management means cooperating with a plurality of communications interfaces** (paragraph [0060], lines 1-6)**, a given said networked item of apparatus having a data link with a specified communications interface** (Fig. 4: leader machine in phase 1 and communications links 6)**, said networked items of apparatus comprise mobile items and static items, wherein all said networked items of apparatus** (paragraph [0276], lines 1-11: communications between construction machines via radio communication links) **are organized in a plurality of hierarchical levels according to a determined dependency relationship of the outdoor worksite** (Fig. 4 and paragraph [0265], lines 1-19: leader machines managing followers machines, which include monitor devices and sensors devices, as read in paragraph [0302], lines 1-8, are devices considered to be in a hierarchy)**, and in that said management means which includes a processor and memory** (paragraph [0108], lines 1-2: the server has memory, and inherently has a processor too).

61. While Tamaru discloses a database in the management server apparatus storing information about the work machines (paragraph [0068], lines 1-6) at a worksite,Tamaru does not teach: **the method comprising the following acts:**

storing a correspondence between each said networked item of apparatus and an address structure reflecting the hierarchical position of that networked item of apparatus in said determined dependency relationship of the civil engineering, landscaping, road or rail link construction, or mining worksite in a database, the networked items of apparatus including the mobile items and static items of apparatus;

operating by converting said address structure reflecting a first hierarchical position of a selected networked item of apparatus into a corresponding device address for accessing said selected networked item of apparatus on said electronic data network;

using that device address to establish a communications link with said selected networked item of apparatus, via its communications interface, in response to a call addressed with an

address structure reflecting the hierarchical position of said selected networked item of apparatus.

62. Yang-Huffman describes a method of collecting information from nodes in a network (paragraph [0013], lines 1-3). Networks nodes or data sources 110-1, 110-n include a SNMP agent and an internal database for storing management information (paragraph [0024], lines 1-13). A network topology application stores a snapshot of the

network into a network map comprising a hierarchical structure of the network (paragraph [0027], lines 1-9). The end nodes are indicated by hostnames that can be mapped to IP, and by symbol position, label, existence of parent, layout status ... (paragraph [0027], lines 21-31). Information of the networks nodes is collected by a monitoring application (paragraph [0029], lines 1-22). SNMP is known to present information about a node of a network in a tree like structure, showing grouping of related objects in sets, and the dependency of objects (paragraph [0007], lines 1-18). For instance, to access the process "sysuptime", which is a managed object in the network, a series of integer: 1.3.1.6.1.2.1.1.3 is used, representing iso.org.dod.internet.mgmt.mib2.system.sysuptime. This representation shows the dependencies between the process, the system host, in the different levels of hierarchy within the organization. To access a node (system host) in response to a call using the hierarchical position of the node, means accessing the hostname or IP of that node, which is described with all the dependencies of the node with other nodes in the network; the IP address of the node is then used to establish communication with that node.

63. Although Yang-Huffman's invention is not directed to mobile or static devices in a worksite, it would have been obvious to a person with ordinary skills in the art at the time of the invention to modify the teachings of Tamaru by the teachings of Yang-Huffman mapping the network devices constituted by the construction work machines into a map file using SNMP, showing the dependency relationship between the works machines and storing the information in a database, in order to implement the storing of

a correspondence between each said item of apparatus and an address structure reflecting the hierarchical position of that item of apparatus and operating by converting said address structure reflecting the hierarchical position of said selected item of apparatus into a corresponding device address for accessing said selected item of apparatus on said electronic network and using the device address to establish communication with that device, as disclosed in claim 61. Using SNMP to map a hierarchical network of devices, with end nodes described with their name/IP allow a descriptive view of the dependencies in a network and could help pinpoint root cause of nodes failures (paragraph [0028], lines 14-21, from Yang-Huffman). For instance, if device1 is mapped as node1.node2.node3.node4.device1 and device2 is mapped as node1.node2.node3.device2, if device2 is functioning OK, and device1 failing, we can deduct that node1.node2.node3 are functioning properly, that narrows the search of failure to node4 or device1.

64. However, the combination of Tamaru and Yang-Huffman does not teach: **converting an address structure designating an item of apparatus to be accessed in accordance with a second hierarchy, the second hierarchy being different from the hierarchy used by the management means to organize the hierarchical levels according to said determined dependency relationship, into the address in said electronic network of said designated item of apparatus, wherein the second hierarchy defines a type of networked item of worksite apparatus.**

65. Uhler discloses classes of objects defining particular instance of objects that can have subclasses (paragraph [0056], lines 1-7, and paragraph [0058], lines 1-10: Uhler converts or represents the objects representing the network devices into classes and subclasses including variables and methods).

66. It would have been obvious to a person of ordinary skills in the art at the time of the invention to combine the teachings of Tamaru and Yang-Huffman with the teachings of Uhler creating hierarchy of classes for the objects in a network, in order to implement a method as disclosed in claim 61. For instance, a class defining attributes of devices such as mobile or static could be defined with a method using variation of coordinate of the devices with time, and further a subclass modifying the attribute of the class could be added as a responsive functionality, as disclosed in claim 39. Such combination would have allowed defining instances of objects including variables and method specific to that class.

67. However, the combination of Tamaru, Yang-Huffman and Uhler does not disclose wherein the first and second hierarchies are dynamically changeable based on the progress of the worksite, addition of one or more new items of apparatus to the worksite, and reassignment of one or more items of apparatus on the worksite.

68. Birger discloses devices such as server, sensors, manufacturing equipment connected in a network (paragraph [0037], lines 1-5). The devices communicate

securely using Identity based Communication Layer (ICL), where each device is assigned a unique identity (paragraph [0040]), that is unchangeable. A second identifier unique within a hierarchical namespace for the enterprise is defined and is changeable (hierarchical identifier) (paragraphs [0081], [0158]). The first identifier is used for authentication purposes and does not change, contrary to the hierarchical identifiers that can change based on the needs of the enterprise (paragraph [0167]). The hierarchical namespace is organized in hierarchy according to areas or regions, grouping devices characterized by type in a directory-like structure (paragraph [0169]).

69. It would have been obvious to a person with ordinary skills in the art at the time of the invention to combine the teachings of Tamaru, Yang-Huffman and Uhler with the teachings of Birger by assigning the items of apparatus as taught by Tamaru, Yang-Huffman and Uhler, hierarchical identifiers reflecting the position of devices in the enterprise namespace as taught by Birger, in order to implement claim 61. Using hierarchical identifiers for the devices in the hierarchy would facilitate scalability when the enterprise needs change (paragraph [0168], from Birger).

70. As to claim 62, the combination of Tamaru, Yang-Huffman, Uhler and Birger discloses a method according to claim 61, wherein the first hierarchical position defines whether the selected networked item of apparatus is a static or mobile apparatus and the second hierarchy defines the type of mobile or static apparatus (paragraph [0056], lines 1-7, and paragraph [0058], lines 1-10, from Uhler: objects representing the

network devices are classified into classes and subclasses including variables and methods, a class defining attributes of devices in a worksite such as mobile or static device could be defined).

71. As to claim 63, the combination of Tamaru, Yang-Huffman, Uhler and Birger discloses a method according to claim 62, wherein the second hierarchy includes definition of a bulldozer or mechanical shovel as the type of mobile apparatus (paragraph [0253], lines 1-6, from Tamaru: work machines are bulldozers, shovels, cranes ...).

72. As to claim 64, the combination of Tamaru, Yang-Huffman, Uhler and Birger discloses a method according to claim 61, further comprising converting an address structure designating an item of apparatus to be accessed in accordance with a third hierarchy, the third hierarchy being different from the first and second hierarchies (paragraph [0056], lines 1-7, and paragraph [0058], lines 1-10, from Uhler: objects representing the network devices are classified into classes and subclasses including variables and methods, a class defining attributes of devices in a worksite such as functionality of a machine, for instance, earth moving machines, could be defined).

73. As to claim 65, the combination of Tamaru, Yang-Huffman, Uhler and Birger discloses a method according to claim 64, wherein the third hierarchical position defines different groups of devices under central command of the device belonging to the

second hierarchy (the earth moving devices, for instance, defined as a class, would include devices belonging to mobile devices, which represent the second hierarchy).

74. *Claim 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamaru, in view of Yang-Huffman.*

75. As to claim 68, Tamaru discloses **a method of managing information exchanges in an outdoor worksite** (paragraph [0002], lines1-5) **with an office on said outdoor worksite, said outdoor worksite comprising any one of a civil engineering worksite, a landscaping worksite, a road or rail link construction worksite or a mining worksite** (paragraph [0265], lines 1-3: site office in Fig. 2A)**, by networked items of apparatus which perform tasks in connection with said outdoor worksite** (paragraph [0056], lines 1-4) **and which receive and/or send data** (paragraph [0057], lines 1-3)**, the method using an electronic data network comprising management means cooperating with a plurality of communications interfaces** (paragraph [0060], lines 1-6)**, a given said networked item of apparatus having a data link with a specified communications interface** (Fig. 4: leader machine in phase 1 and communications links 6)**, said networked items of apparatus** (paragraph [0276], lines 1-11: communications between construction machines via radio communication links) **comprise mobile items of apparatus and static items of apparatus (**paragraph [0329], lines 1-7: constructions machines and sensors)**, wherein all said networked items of apparatus are organized in a plurality of hierarchical**

levels according to a determined dependency relationship of the outdoor worksite (Fig. 4 and paragraph [0265], lines 1-19: leader machines managing followers machines, which include monitor devices and sensors devices, as read in paragraph [0302], lines 1-8, are devices considered to be in a hierarchy)**, and in that said management means which includes a processor and memory** (paragraph [0108], lines 1-2: the server has memory, and inherently has a processor too).

76. While Tamaru discloses a database in the management server apparatus storing information about the work machines (paragraph [0068], lines 1-6) at a worksite comprising **networked items of apparatus including the mobile items and static items of apparatus** (paragraph [0302], lines 1-8: construction machines associated with sensors for determining vehicle conditions and positions), Tamaru does not teach **the method comprising the following acts:**

storing a correspondence between each said networked item of apparatus and an address structure reflecting the hierarchical position of that networked item of apparatus in said determined dependency relationship of the civil engineering, landscaping, road or rail link construction, or mining worksite in a database; operating by converting said address structure reflecting the hierarchical position of a selected networked item of apparatus into a corresponding device address for accessing said selected networked item of apparatus on said electronic data network, the device address including data identifying a context of the selected networked item of apparatus such that the selected networked item of apparatus is ascertainable from other networked items of apparatus on

the worksite from the device address alone; and

using that device address to establish a communications link with said selected networked item of apparatus, via its communications interface, in response to a call addressed with an

address structure reflecting the hierarchical position of said selected networked item of apparatus.

77. Yang-Huffman describes a method of collecting information from nodes in a network (paragraph [0013], lines 1-3). Networks nodes or data sources 110-1, 110-n include a SNMP agent and an internal database for storing management information (paragraph [0024], lines 1-13). A network topology application stores a snapshot of the network into a network map comprising a hierarchical structure of the network (paragraph [0027], lines 1-9). The end nodes are indicated by hostnames that can be mapped to IP, and by symbol position, label, existence of parent, layout status ... (paragraph [0027], lines 21-31). Information of the networks nodes is collected by a monitoring application (paragraph [0029], lines 1-22). SNMP is known to present information about a node of a network in a tree like structure, showing grouping of related objects in sets, and the dependency of objects (paragraph [0007], lines 1-18). For instance, to access the process "sysuptime", which is a managed object in the network, a series of integer: 1.3.1.6.1.2.1.1.3 is used, representing iso.org.dod.internet.mgmt.mib2.system.sysuptime. This representation shows the dependencies between the process, the system host, in the different levels of hierarchy within the organization. To access a node (system host) in response to a call using the

hierarchical position of the node, means accessing the hostname or IP of that node, which is described with all the dependencies of the node with other nodes in the network; the IP address of the node is then used to establish communication with that node.

78. Although Yang-Huffman's invention is not directed to mobile or static devices in a worksite, it would have been obvious to a person with ordinary skills in the art at the time of the invention to modify the teachings of Tamaru by the teachings of Yang-Huffman mapping the network devices constituted by the construction work machines (mobile or static), into a map file using SNMP, showing the dependency relationship between the works machines and storing the information in a database, in order to implement the storing of a correspondence between each said item of apparatus and an address structure reflecting the hierarchical position of that item of apparatus and operating by converting said address structure reflecting the hierarchical position of said selected item of apparatus into a corresponding device address for accessing said selected item of apparatus on said electronic network and using the device address to establish communication with that device, as disclosed in claim 68. The address of a selected device shows the position of the selected device in the hierarchy with regard to the other devices in the hierarchy, that position is interpreted as a context of the selected device, and allow to ascertain the selected device from the other device in the hierarchy. Using SNMP to map a hierarchical network of devices, with end nodes described with their name/IP allow a descriptive view of the dependencies in a network and could help pinpoint root cause of nodes failures (paragraph [0028], lines 14-21,

from Yang-Huffman). For instance, if device1 is mapped as node1.node2.node3.node4.device1 and device2 is mapped as node1.node2.node3.device2, if device2 is functioning OK, and device1 failing, we can deduct that node1.node2.node3 are functioning properly, that narrows the search of failure to node4 or device1. The method of Yang-Huffman can be used regardless of the functionality of a node of device in the network (earth moving device, static device).

79. *Claims 66 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamaru and Yang-Huffman, in view of Karaoguz.*

80. As to claim 66, Tamaru discloses **a method of managing information exchanges in an outdoor worksite** (paragraph [0002], lines1-5) **with an office on said outdoor worksite, said outdoor worksite comprising any one of a civil engineering worksite, a landscaping worksite, a road or rail link construction worksite or a mining worksite** (paragraph [0265], lines 1-3: site office in Fig. 2A)**, by networked items of apparatus which perform tasks in connection with said outdoor worksite** (paragraph [0056], lines 1-4) **and which receive and/or send data** (paragraph [0057], lines 1-3)**, the method using an electronic data network comprising management means cooperating with a plurality of communications interfaces** (paragraph [0060], lines 1-6)**, a given said networked item of apparatus having a data link with a specified communications interface** (Fig. 4: leader machine in phase 1 and communications links 6)**, said networked items of apparatus**

(paragraph [0276], lines 1-11: communications between construction machines via radio communication links) **comprise mobile items and static items** (paragraph [0329], lines 1-7: constructions machines and sensors)**, wherein all said networked items of apparatus are organized in a plurality of hierarchical levels according to a determined dependency relationship of the outdoor worksite** (Fig. 4 and paragraph [0265], lines 1-19: leader machines managing followers machines, which include monitor devices and sensors devices, as read in paragraph [0302], lines 1-8, are devices considered to be in a hierarchy)**, and in that said management means which includes a processor and memory** (paragraph [0108], lines 1-2: the server has memory, and inherently has a processor too).

81. While Tamaru discloses a database in the management server apparatus storing information about the work machines (paragraph [0068], lines 1-6) at a worksite comprising **networked items of apparatus including the mobile items and static items of apparatus** (paragraph [0302], lines 1-8: machines associated with sensors for determining vehicle conditions and positions),Tamaru does not teach **the method comprising the following acts:**

storing a correspondence between each said networked item of apparatus and an address structure reflecting the hierarchical position of that networked item of apparatus in said determined dependency relationship of the civil engineering, landscaping, road or rail link construction, or mining worksite in a database;

operating by converting said address structure reflecting the hierarchical position of a selected networked item of apparatus into a corresponding device

address for accessing said selected networked item of apparatus on said electronic data network;

using that device address to establish a communications link with said selected networked item of apparatus, via its communications interface, in response to a call for position coordinates addressed with an address structure reflecting the hierarchical position of said selected networked item of apparatus.

82. Yang-Huffman describes a method of collecting information from nodes in a network (paragraph [0013], lines 1-3). Networks nodes or data sources 110-1, 110-n include a SNMP agent and an internal database for storing management information (paragraph [0024], lines 1-13). A network topology application stores a snapshot of the network into a network map comprising a hierarchical structure of the network (paragraph [0027], lines 1-9). The end nodes are indicated by hostnames that can be mapped to IP, and by symbol position, label, existence of parent, layout status ... (paragraph [0027], lines 21-31). Information of the networks nodes is collected by a monitoring application (paragraph [0029], lines 1-22). SNMP is known to present information about a node of a network in a tree like structure, showing grouping of related objects in sets, and the dependency of objects (paragraph [0007], lines 1-18). For instance, to access the process "sysuptime", which is a managed object in the network, a series of integer: 1.3.1.6.1.2.1.1.3 is used, representing iso.org.dod.internet.mgmt.mib2.system.sysuptime. This representation shows the dependencies between the process, the system host, in the different levels of hierarchy within the organization. To access a node (system host) in response to a call using the

hierarchical position of the node, means accessing the hostname or IP of that node, which is described with all the dependencies of the node with other nodes in the network; the IP address of the node is then used to establish communication with that node.

83. Although Yang-Huffman's invention is not directed to mobile or static devices in a worksite, it would have been obvious to a person with ordinary skills in the art at the time of the invention to modify the teachings of Tamaru and Karaoguz by the teachings of Yang-Huffman mapping the network devices constituted by the construction work machines (mobile or static), into a map file using SNMP, showing the dependency relationship between the works machines and storing the information in a database, in order to implement the storing of a correspondence between each said item of apparatus and an address structure reflecting the hierarchical position of that item of apparatus and operating by converting said address structure reflecting the hierarchical position of said selected item of apparatus into a corresponding device address for accessing said selected item of apparatus on said electronic network and using the device address to establish communication with that device, as disclosed in claim 66. Using SNMP to map a hierarchical network of devices, with end nodes described with their name/IP allow a descriptive view of the dependencies in a network and could help pinpoint root cause of nodes failures (paragraph [0028], lines 14-21, from Yang-Huffman). For instance, if device1 is mapped as node1.node2.node3.node4.device1 and device2 is mapped as node1.node2.node3.device2, if device2 is functioning OK, and device1 failing, we can deduct that node1.node2.node3 are functioning properly,

that narrows the search of failure to node4 or device1. The method of Yang-Huffman can be used regardless of the functionality of a node of device in the network (earth moving device, static device).

84. However, the combination of Tamaru and Yang-Huffman does not teach:
receiving a position message from the selected networked item of apparatus the position message containing the coordinates of the selected networked item of apparatus and its identification information; and
updating a position table with the coordinates of the selected networked item of apparatus.

85. Karaoguz discloses a plurality of wireless devices capable of communicating with each other (paragraph [0019], lines 9-17). A user of a device entering a geographic area activates a device locator to identify the available devices (paragraph [0024], lines 1-10). The user device determines its own position (paragraph [0042], lines 1-3) and determines the distance range of available devices and the coordinates of each available device it can be in communication with within the distance range (paragraph [0044], lines 1-9). The user device includes memory that can store information such as geographic map, coordinates, and lookup tables (paragraph [0048], lines 7-10).

86. It would have been obvious to a person with ordinary skills in the art at the time of the invention to modify the teachings of Tamaru and Yang-Huffman by implementing the capabilities of mobiles devices as taught by Karaoguz into the networked items of

apparatus, the capabilities allowing the networked items of apparatus to communicate with each other in the network, determine geographic coordinates of the others networked items, and store the information into lookup tables in memory. Determining the position of other networked items of apparatus and storing the information would be useful for fetching items closest to the place where they are needed.

87. As to claim 69, the combination of Tamaru and Yang-Huffman discloses a method according to claim 68, however, the combination of Tamaru and Yang-Huffman does not teach receiving and storing positional coordinates from the mobile and static items of apparatus.

88. Karaoguz discloses a plurality of wireless devices capable of communicating with each other (paragraph [0019], lines 9-17). A user of a device entering a geographic area activates a device locator to identify the available devices (paragraph [0024], lines 1-10). The user device determines its own position (paragraph [0042], lines 1-3) and determines the distance range of available devices and the coordinates of each available device it can be in communication with within the distance range (paragraph [0044], lines 1-9). The user device includes memory that can store information such as geographic map, coordinates, and lookup tables (paragraph [0048], lines 7-10).

89. It would have been obvious to a person with ordinary skills in the art at the time of the invention to modify the teachings of Tamaru and Yang-Huffman by implementing the capabilities of mobiles devices as taught by Karaoguz into the networked items of

apparatus, the capabilities allowing the networked items of apparatus to communicate with each other in the network, determine geographic coordinates of the others networked items, and store the information into lookup tables in memory. Determining the position of other networked items of apparatus and storing the information would be useful for fetching items closest to the place where they are needed.

90. *Claims 67 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamaru and Yang-Huffman and Karaoguz, in view of Gunji, U.S. Patent No. 5,926,117, hereinafter Gunji.*

91. As to claim 67, the combination of Tamaru, Yang-Huffman and Karaoguz discloses a method according to claim 66 including a the position table containing the current position coordinates of all communication interfaces within communication range of the management means (paragraph [0044], lines 1-9, from Karaoguz: determine devices in the distance range of a first devices and paragraph [0048], lines 7-10, from Karaoguz: store information such as geographic map, coordinates, and lookup tables in memory), the combination of Tamaru, Yang-Huffman and Karaguz does not teach transmitting the position table at the worksite to at least selected networked item of apparatus as well as other networked items of apparatus.

92. Gunji discloses a vehicle control system comprising a group of vehicles each having its own position detecting means and a base station receiving position information of the vehicles (col. 2, lines 38-48) and transmitting the information to

specific vehicles (col. 3, lines 2-5). The information transmitted to specific vehicles is used for collision avoiding (col. 6, 2-8).

93. It would have been obvious to a person with ordinary skills in the art at the time of the invention to modify the teachings of Tamaru, Yang-Huffman and Karaoguz by the teachings of Gunji by having the positional coordinates of networked devices determined and stored in the method described by Tamaru, Yang-Huffman and Karaoguz, be transmitted to other devices in close vicinity as taught by Gunji, in order to implement claim 67. Transmitting positional information of devices to other devices in close vicinity would allow devices to know the position of each other, and would have allowed to manage the devices in a network, knowing their spatial position, for instance to locate which devices are in close vicinity, for efficient communication.

94. As to claim 70, the combination of Tamaru, Yang-Huffman and Karaoguz discloses a method according to claim 69; however, the combination of Tamaru, Yang-Huffman and Karaoguz does not teach relaying the stored positional coordinates to the mobile and static items of apparatus.

95. Gunji discloses a vehicle control system comprising a group of vehicles each having its own position detecting means and a base station receiving position information of the vehicles (col. 2, lines 38-48) and transmitting the information to specific vehicles (col. 3, lines 2-5). The information transmitted to specific vehicles is used for collision avoiding (col. 6, 2-8).

96. It would have been obvious to a person with ordinary skills in the art at the time of the invention to modify the teachings of Tamaru, Yang-Huffman and Karaoguz by the teachings of Gunji by having the positional coordinates of networked devices determined and stored in the method described by Tamaru, Yang-Huffman and Karaoguz, be transmitted to other devices in close vicinity as taught by Gunji, in order to implement claim 70. Transmitting positional information of devices to other devices in close vicinity would allow devices to know the position of each other, and avoid collision.

Response to Arguments

97. Applicants' amendments and arguments were received on 12/13/2010.

98. Applicant 's amendment to claim 67, rejected under 35 U.S.C 112, second paragraph, overcome the rejection. Therefore the rejection id withdrawn.

99. Applicant argues against combining the teachings of Tamaru and Yang-Huffman. Applicant states "Yang-Huffman is directed to monitoring network usage and has nothing to do with managing network on a worksite". Applicant argues that Tamaru does not teach that a different improved hierarchy-related addressing using SNMP would be advantageous.

100. The examiner respectfully disagrees. Tamaru discloses a management system in a worksite including mobile and fixed devices. Yang-Huffman discloses using SNMP (Simple Network Management Protocol) to gather information from network devices.

SNMP is used for management purposes too, by collecting objects representing activity or resource related to the devices, and constituting entities to be managed (paragraph [0005]-[0006]). SNMP allows storing a snapshot of the network into a map using a hierarchical structure, showing the dependency between devices, allowing to access a device in the hierarchy by using an address structure reflecting the position of a device in a network (see rejection of independent claim above). Using SNMP as taught by Yang-Huffman would be advantageous, as the relationship between devices is used to access a device in a hierarchy, and would allow pinpointing to failed devices in the hierarchy, regardless of the type of devices. The examiner maintains that the rationale used for combining Tamaru and Yang-Huffman would be advantageous in any interconnected network of devices, which are dependent on each other. The benefits provided by the combination do not have to be taught by neither Tamaru, nor Yang-Huffman.

101. Applicant argues that the examiner did not show how the references are to be functionally and successfully combined. In SNMP, devices are represented by objects in a tree like structure, where each object has a unique identifier. SNMP uses a notation including '.' separating objects in a hierarchy, as would a notation with '/' do to separate objects in a tree or directory-like structure. A giving object is uniquely identified by a Object Identifier (OID) comprising all the objects in the upper levels of the structure including the given object. All objects in a hierarchy could be represented using SNMP to show the dependency between , and there are no contrary teachings on why the

combination would not work. Using SNMP allow accessing objects by an address structure reflecting the position of the object in the hierarchy.

102. Applicant argues that Karaoguz 's environment is different from a worksite as disclosed in the application, And that a person with ordinary skills in the art would not use the teachings of Karaoguz. The examiner respectfully disagrees. Karaoguz teaches devices capable of communicating with each other by determining their own position and the distance range the devices can communicate with other devices. Regardless of the devices type and the environment setting (devices in coffee shop, hotels, offices), the technique of Karaoguz could be applied to devices in a worksite, if the devices have the capabilities shown by Karaoguz.

103. Applicant argues that the teachings of Gunji would not be used in a worksite environment, and would not be helpful in a worksite. The examiner respectfully disagrees: Gunji was brought in to teach the limitation: "transmitting the position table at the worksite to at least selected networked item of apparatus as well as other networked items of apparatus", in claim 67, all other limitations being taught by Tamaru, Yang-Huffman and Karaoguz. Karaoguz particularly teaches storing geographic information of devices in a lookup table. Ganji remedies the deficiencies of Tamaru, Yang-Huffman and Karaoguz, for not teaching transmitting the position table within the network. Ganji teaches vehicles transmitting their position to a base station for management purposes (aimed to avoid collusion, in the teachings of Ganji). A person with ordinary skills in teh art at the time of the invention would have used the teachings of Gunji in a worksite to

transmit the geographic position of devices to a network manager and other devices in the network, in order to implement claim 67. Such combination would have allowed to manage the devices in a network, knowing their spatial position, for instance to locate which devices are in close vicinity, for efficient communication.

Conclusion

104. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

105. Niiyama et al., U.S. 20100302974 discloses devices mounted on vehicles communicating with each other;

106. Kumar et al., 2002: "Critical successes factors for the implementation of integrated automation solutions with PC based control- Proceedings of the 10th Mediterranean Conference on Control and Automation- MED2002, Lisbon, Portugal, 2002, page 1-10;

107. Hennenlotter, U.S. 7130278 discloses a multi-layer representation of a hierarchical network;

108. Mayer, U.S. 20020019864 discloses a hierarchical IT environment supporting changes in configuration for IT devices;

109. Ebling et al., u.S. 7383347 discloses a scalable method of sending messages from root device to downstream devices ;

110. Maki et al., U.S. 7293067 discloses using icon to display device status information and location information;

111. Tezuka et al., U.S. 6047320 discloses updating node configuration changes in the logical hierarchies of devices;

112. Lee et al., U.S. 5937163 discloses accessing nodes organized in a hierarchy;

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CATHERINE THIAW whose telephone number is (571)270-1138. The examiner can normally be reached on 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOSEPH THOMAS can be reached on 571-272-6776. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. T./
Examiner, Art Unit 2493
12/24/2010

/Carl Colin/
Acting SPE of Art Unit 2493